

APPENDIX PSEUDOCODE FOR SEQUENCING RUNTIME

(Turns on lowest runtime)
(Turns off high runtime)

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if (Lead Lag Config.= Efficiency Optimized With Runtime)

- mark invalid runtimes or
- disabled boilers or
- invalid combos

} comment

repeat for Boiler index 1 to MAXSTAGES (typical MAXSTAGE = 16)
[
if (Stage [index].Heat Stage Runtime = INVALID) (e.g. 65535)
[
set stage [index]. AddRank = 0
set stage [index]. DelRank = 0
]
endif
]
andrepeat

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repeat for Boiler index 1 to MAXSTAGES
[
if (Stage [index].Heat Stage Runtime != INVALID) (e.g. not 65535)
and Stage [index]. AddRank = 0
and Stage [index]. DelRank = 0)
[
set stage [index]. AddRank = 15
set stage [index]. DelRank = 0
]
elseif (Stage [index]. AddRank != 0
and Stage [index]. DelRank != 0)
[
set stage [index]. AddRank = 15
set stage [index]. DelRank = 0
]
else
[do nothing]
endif
]
endrepeat

y = 0 ! stage y has the lowest runtime hours
Lowest Runtime = 65535
Boiler On Tot = 0
v = 0 ! stage v has the high runtime hours
Highest Runtime = 0

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Comment:

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calculate add ranks of runtimes

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→ calculate ADD ranks of Runtime
repeat for Boiler index 1 to MAXSTAGES
    [ if (Stage [index].Heat Stage Runtime != INVALID)
      and Stage [index].AddRank != 0 }
      and Stage [index].DelRank = 0) } current stage is off
      and Stage [index].Heat Stage Runtime ≤ lowest Runtime
      [ Lowest Runtime = Stage[index].HeatStageRuntime
        y = [index]
      endif
    ]
    → calculate DEL ranks
    [ if (Stager [index].AddRank = 0
      and (Stager [index].DelRank != 0) } current stage is on
      [ if (NumberofStages Requested = 0)
        [ set Stage [index].AddRank = 15
          set Stage [index].DelRank = 0 setTotalOnStages ++
        else if (Stage [index].Heat Stage Runtime ≥ Highest Runtime
          [ Highest Runtime = Stage [index].Heat Stage Runtime
            v = [index]
          endif
        endif
      ]
    ]
  endif
endrepeat

```

CONFIDENTIAL

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[illegible]